ABSTRACT OF THE INVENTION

The invention is directed to collagenous tissues which have been treated to remove non-collagenous components such as cells, cellular debris, and other extracellular matrix components, such as proteoglycans and glycosaminoglycans, normally found in native tissues. Treatment of the tissue with alkali, chelating agents, acids and salts removes non-collagenous components from the collagenous tissue matrix while controlling the amount of swelling and dissolution so that the resultant collagen matrix retains its structural organization, integrity and bioremodelable properties. The process circumvents the need to use detergents and enzymes which detrimentally affect the cell compatibility, strength and bioremodelability of the collagen matrix. The collagenous tissue matrix is used for implantation, repair, or use in a mammalian host.